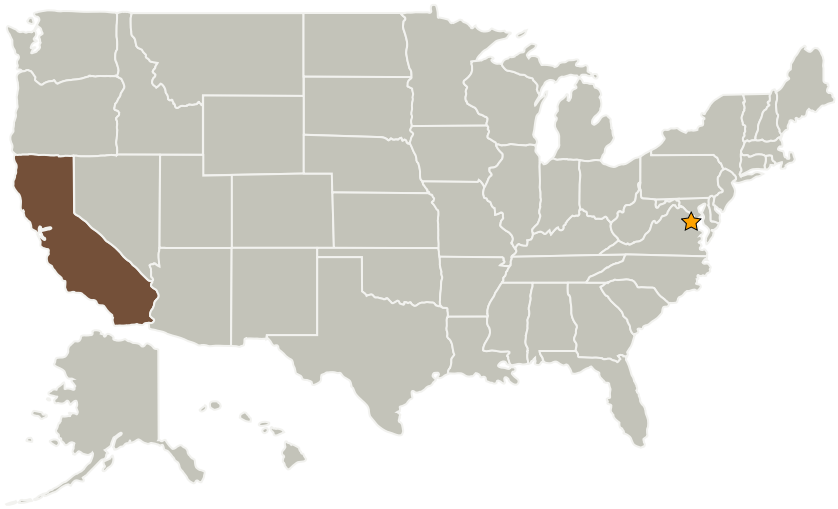
Development of a Prototype 2 mm Fiber-Coupled Seed Laser for Integration in Lidar Transmitter

Completed Technology Project (2012 - 2013)

Project Introduction

Optimize the performance of Gallium Antimonide (GaSb)-based 2.05 mm lasers (previously developed under JPL's Research and Technology Development (R&TD) Program) for emission at the precise wavelength of 2.05 mm with an angular emission for efficient coupling into polarization maintained (PM) optical fiber
Develop a robust fiber coupled hermitically sealed package to house the diode laser while maintaining its high power and narrow linewidth performance
Integrate these lasers in the frequency locked system (currently developed under under JPL R&TD Program) to demonstrate a frequency stable laser with at least 10 mW output power (with a 40-50mW goal), ~100 KHz linewidth, and 1 MHz long-term stability

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★NASA Headquarters(HQ)	Lead Organization	NASA Center	Washington, District of Columbia

Project Image Development of a Prototype 2 mm Fiber-Coupled Seed Laser for Integration in Lidar Transmitter

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Primary U.S. Work Locations

California

Images

11856-1363100485529.png
Project Image Development of a Prototype 2 mm Fiber-Coupled Seed Laser for Integration in Lidar Transmitter
(https://techport.nasa.gov/image/1704)

Organizational Responsibility

Responsible Mission Directorate:
Science Mission Directorate (SMD)

Lead Center / Facility:
NASA Headquarters (HQ)

Responsible Program:
Earth Science

Project Management

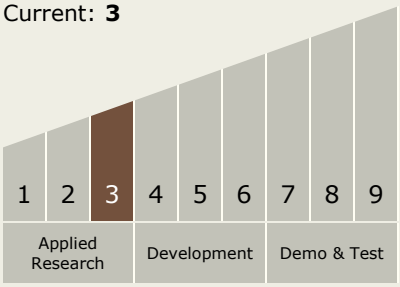
Program Director:
George J Komar

Project Manager:
Parminder S Ghuman

Principal Investigator:
Siamak Forouhar

Technology Maturity (TRL)

Start: **3**
Current: **3**



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Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.5 Lasers

Target Destination

Earth